



# Report in Brief

January 20, 2022

## Background

The National Oceanic and Atmospheric Administration's (NOAA's) National Environmental Satellite, Data, and Information Service (NESDIS) acquires and manages the nation's operational environmental satellite systems. NOAA's Geostationary Operational Environmental Satellites (GOES) provide near-real time environmental observations of Earth's Western Hemisphere that are critical for weather forecasting, storm tracking, and severe weather warnings. GOES also provides advanced detection and monitoring of environmental hazards like wildfires, smoke, dust, volcanic ash, drought, and flooding. The key performance parameter (KPP)—the highest-priority data collected by GOES—is cloud and moisture imagery.

NOAA's latest generation of GOES, the GOES-R series (the Program), is a four-satellite program that provides advanced imagery and atmospheric measurements of Earth. On the GOES-R series, the Advanced Baseline Imager instrument provides the KPP imagery. The GOES-R series is expected to operate to 2040. As of September 2021, GOES-T, the third satellite in the series, was scheduled to launch on February 16, 2022.

## Why We Did This Review

Our audit objective was to assess the Program's progress in achieving launch readiness for the GOES-T mission.

## NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

### Redesigned GOES-T is Ready for Launch, but NOAA Should Reassess Its Assumptions for Satellite Launch Planning and Storage

OIG-22-015-A

## WHAT WE FOUND

We found the following:

- I. The Program works toward the earliest achievable launch dates at potentially increased development risk.
- II. NESDIS is planning GOES launches sooner than its policy requires without analyzing the costs.
- III. NESDIS assumes ground storage of satellites is not viable, but has not formally studied tradeoffs.

## WHAT WE RECOMMEND

We recommend that the NOAA Deputy Under Secretary for Operations ensure that the Assistant Administrator for Satellite and Information Services does the following:

1. Conduct an analysis of alternatives or similar assessment to determine whether to continue the Program's approach of managing schedules toward the earliest possible launch dates.
2. Conduct a cost-benefit analysis of selected geostationary coverage availability thresholds, and update its geostationary launch policy as appropriate.
3. Determine the cost of operating spare satellites on orbit versus alternative options, including consideration of constellation longevity and satellite development risks, to help inform optimal acquisition and launch strategies.
4. Assess the cost effectiveness of satellite ground and on-orbit storage options using current cost, schedule, and technical performance data that can inform NESDIS satellite storage decisions.
5. On future satellite series, document storage option considerations early in the acquisition process to optimize satellite storage alternatives.